

FEPW (FedExec Planner's Workbook) Editor

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Federation Execution Planning Workbook (FEPW)

FEPW is a set of tables for specifying the configuration and run-time characteristics of a federation execution

- information needed for pre-execution planning
- specifies the performance characteristics of a federation execution

- **Tables:**

- Summary Tables
- Host Table
- LAN Tables
- RTI Services Tables
- Object/Interaction Tables
- Cross-Reference Tables
- Data Representation Tables

Federation Execution Summary Table

Defines at a high level the composition of a federation execution

- Use: describe execution details of federation
 - federation execution name
 - member federate information
 - ♦ name
 - ♦ API used
 - ♦ tick information (rate, min, max)
 - ♦ time management info (regulating, constrained, lookahead values)
 - ♦ host and LAN federate is executing on
 - version of RTI software
 - number and name of concurrent federation executions

FedExec Summary Table GUI

Run-time MATHEW

File Edit View Control Go Help

Planning Execution Analysis

FILE CONTROLS

FILEPw Tables

TABLES

- Federation Exec. Summ
- Host Table
- LAN Tables
- RTI Services Table
- Object/Interaction Table

Validate

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Federation Execution Summary Table

Federation Execution Name: TestFederation

RTI Software Used (Version): 1.1

	Name	API	Tic Rate	Time Management Switches		Host	LAN
				Regulating	Constraining		
Fed ₁	FederateA	C++	tick(0,1)	N	N	Host1	1
Fed ₂	FederateB	C++	tick(0,1)	N	N	Host2	1
Fed ₃	Collector1	C++	tick(0,1)	N	N	Host3	1
Fed ₄	Mathew1	Java	tick(0,1)	N	N	Host4	1

Add Modify Delete

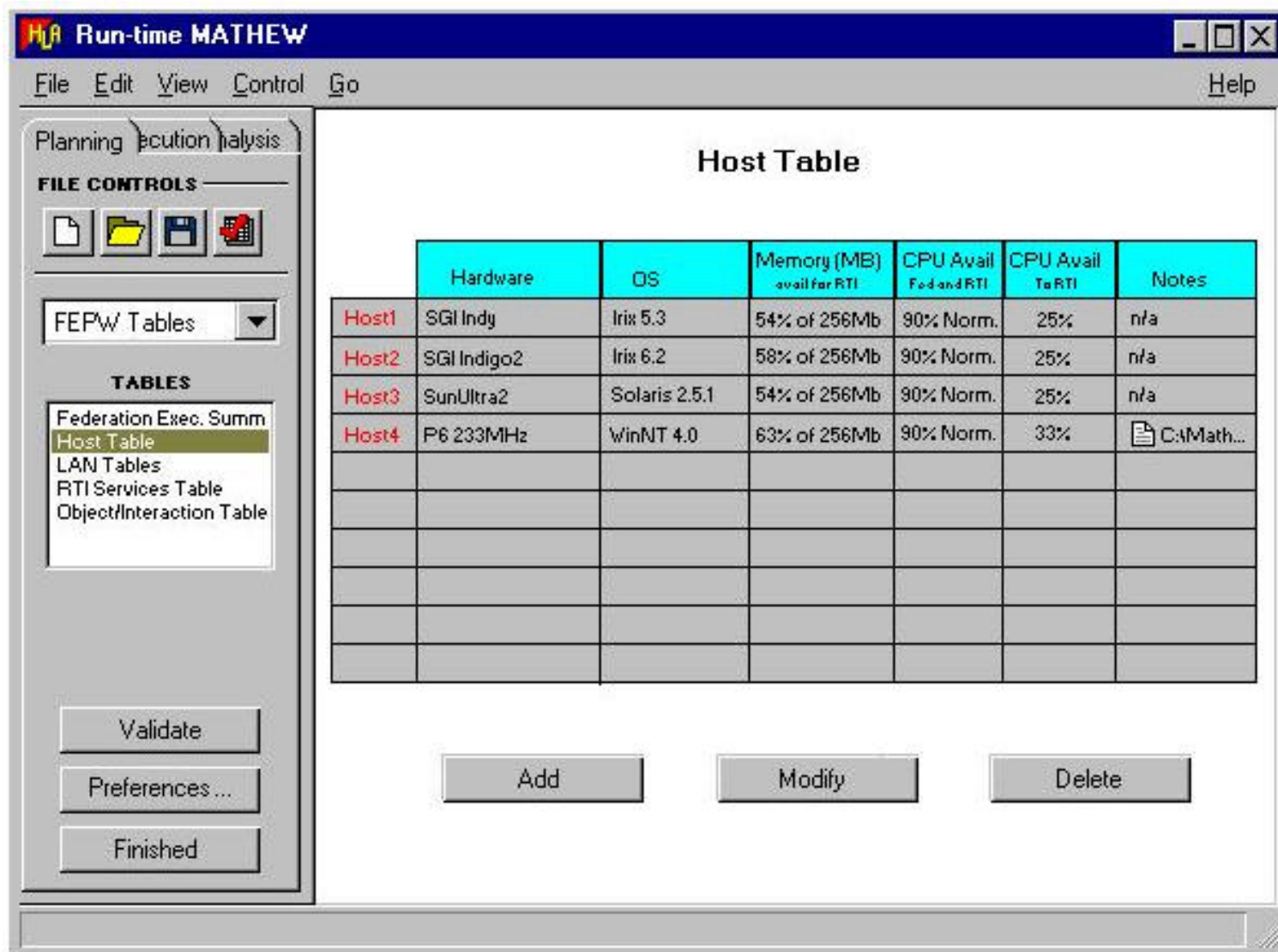
If more than one, list names of others beyond this fedex

Host Table

Provides details about hardware that affect performance of the federate and RTI

- Use: describe for each host the following information
 - hardware
 - ◆ system type and OS
 - ◆ number of CPUs
 - ◆ CPU speed
 - operating system
 - total memory and free memory available
 - % of CPU available to RTI
 -
 -

Host Table GUI



LAN Table

Provides information about bandwidth available and latencies introduced by network infrastructure

- Use:
 - describe each LAN in the federation execution
 - ♦ physical type
 - ♦ throughput available to FEDEX
 - describe LAN to LAN connectivity
 - ♦ type of device used to connect each LAN
 - ♦ effective throughput available to fedex for each device
 - ♦ latency introduced by device

LAN Description GUI

Run-time MATHEW

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Planning Execution Analysis

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FEPW Tables ▼

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LAN Tables

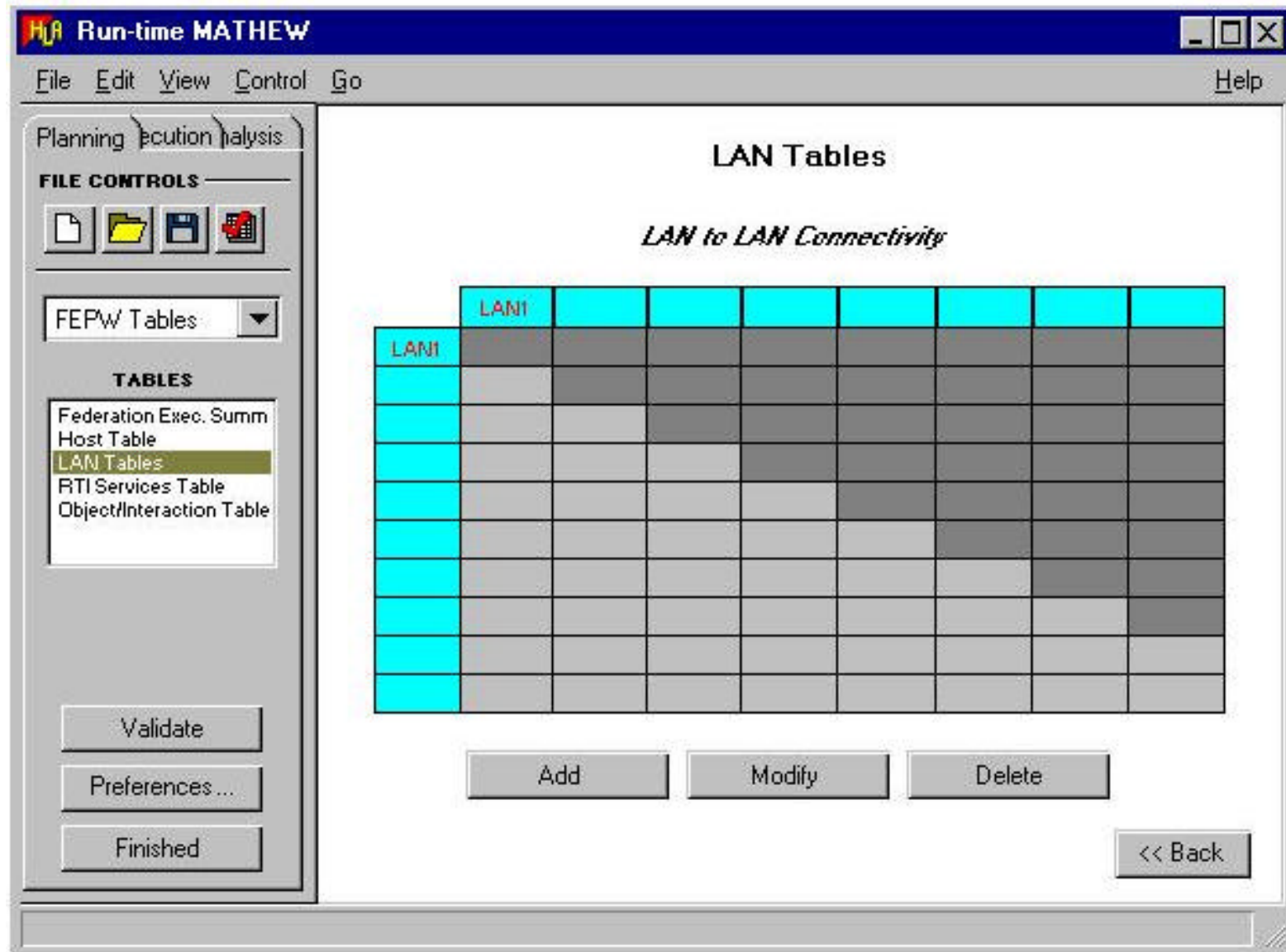
LAN Descriptions

	Physical Type	Throughput Avail For FEDEX
LAN1	Ethernet	100 Mbps

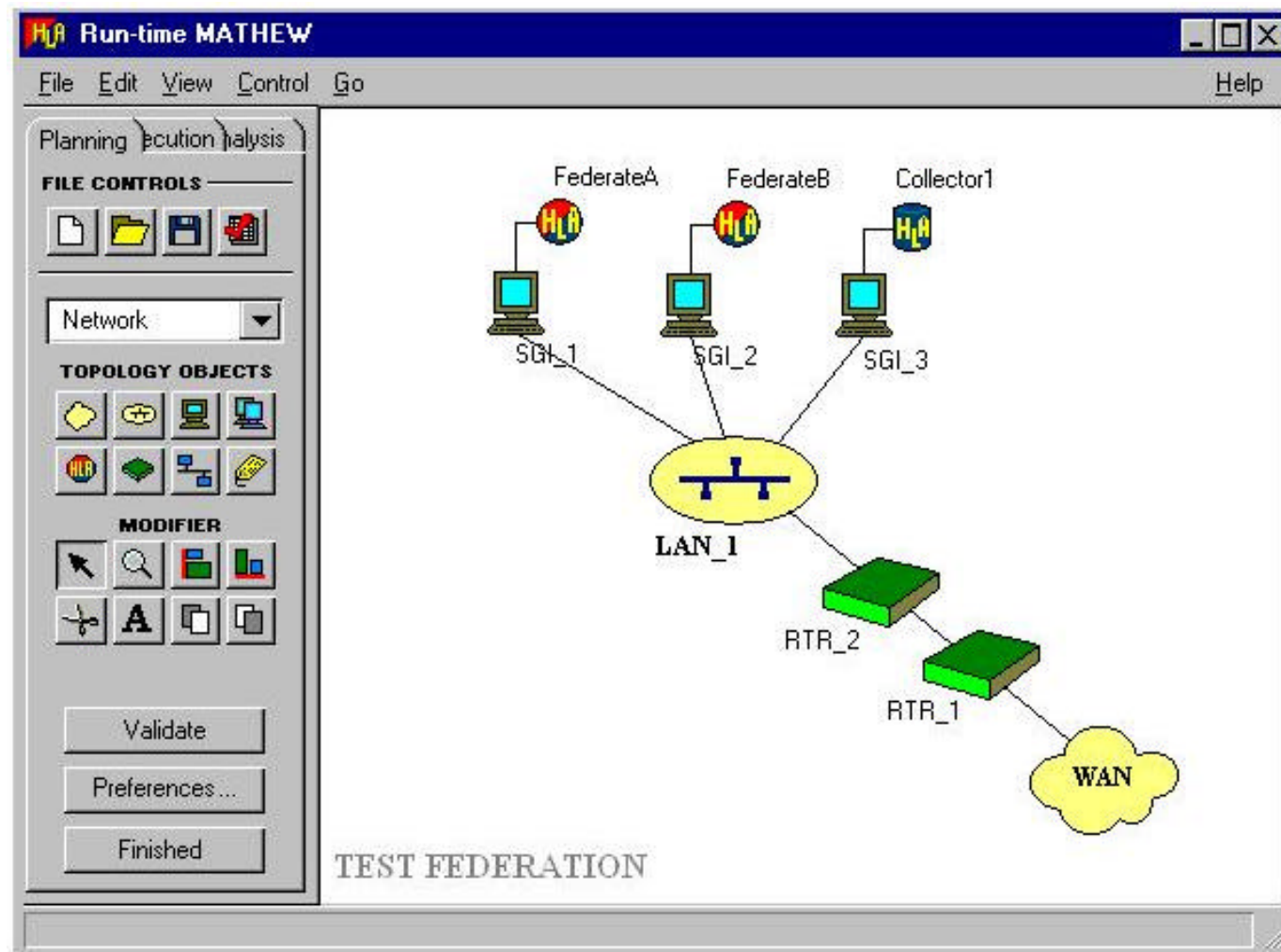
Add Modify Delete

Next >>

LAN Connectivity GUI



Topological View GUI



RTI Services Table

Lists the services a federate and federation execution uses.

Use: fill out table for each federate and a summary for federation execution

- specify whether each service is used at least once during the federation execution

RTI Service Table GUI

Run-time MATHEW

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Planning Execution Analysis

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FEPW Tables

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- RTI Services Table**
- Object/Interaction Table

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RTI Services Table

Service	IF Spec v1.1 Ref	Use
Create Federation Execution	2.1	NO
Destroy Federation Execution	2.2	NO
Join Federation Execution	2.3	NO
Resign Federation Execution	2.4	NO
Request Pause	2.5	NO
Initiate Pause	2.6	NO
Pause Achieved	2.7	NO
Request Resume	2.8	NO
Initiated Resume	2.9	NO
Resume Achieved	2.10	NO
Request Federation Save	2.11	NO
Initiate Federation Save	2.12	NO
Federation Save Begun	2.13	NO
Federation Save Achieved	2.14	NO
Request Restore	2.15	NO

Object / Interaction Table

Specify run-time characteristics related to FOM data that affect interoperability and performance of federation execution

- Use: fill out table for each federate
 - objects
 - ◆ number simulated by federate
 - ◆ attribute sizes, nominal and maximum update rate, maximum tolerable latency, attribute transport and ordering, update groupings, ownership transfer groupings
 - ◆ interactions
 - ◆ interaction transport and ordering
 - ◆ parameter sizes, nominal and maximum update rate, maximum tolerable latency, send groupings

Object / Interaction Table GUI

Run-time MATHEW

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Planning Execution Analysis

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Preferences...

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Object / Interaction Table

Federate Name: **FederateA**

Objects

Object	No.	Attribute	Size	Update	Subs.
Obj1	1	Attribute1	4	Y	Y
Obj2	2	Attribute2	4	Y	Y
Obj3	3	Attribute3	8	Y	Y
	4	Attribute4	8	Y	Y
	5	Attribute5	8	Y	Y

Add Modify Delete

Fed1 Fed2 Fed3 Fed4

Latency Measurement Definition

- Latency is measured at the RTI interface on each federate
 - RTI ambassador for updateAttributeValues
 - FederateAmbassador for reflectAttributeValues

